MONOPRICE®

3.5″ Dual Bay
USB 3.0 RAID HDD Enclosure

User Manual

August 11, 2011 – v1.1
MFG Part # MT2U3-MP

BARCODE

1 Introduction

1.1 System Requirements

1.1.1 PC Requirements

- Minimum Intel Pentium III CPU 500MHz, 128MB RAM
- Windows Vista, Windows 7
- Your hardware device must have the correct corresponding port (e.g. USB 3.0 host controller)

1.1.2 Mac Requirements

- Minimum Apple G4 processor, 128MB RAM
- Mac OS 10.4 or above
- Your hardware device must have the correct corresponding port (e.g. USB 2.0 host controller)

Note

USB 3.0 was not available for the Mac OS at the time this manual was written. However, it is possible to use the drive with the slower USB 2.0 connection.

1.1.3 Supported Hard Drives

- One or two 3.5" SATA-I or SATA-II hard drives (1.5Gb/s or 3.0Gb/s)
- 20GB - 2TB per HDD
- Hard drives of identical capacities are recommended
- Supports large volumes in excess of 2TB

Note

In order for the computer to access volumes larger than 2TB, both the hardware and OS need to have the capacity to support large volumes (e.g. Windows Vista or Mac OS 10.4 and above).

1.2 Package Contents

Package content may vary depending on vendor & version.

- NT2 storage enclosure (hard drives not included)
- Power supply
- Interface cable
- User manual

1.3 About this Manual

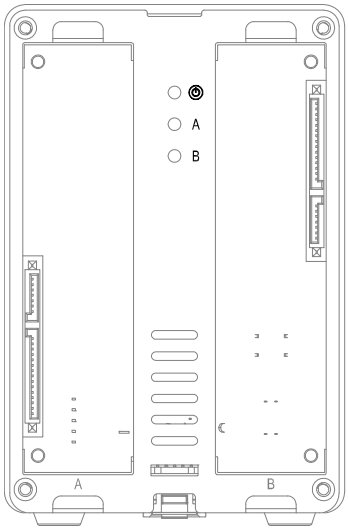
Firmware, images and descriptions may vary slightly between this manual and the actual product you have. Functions and features may change depending on the firmware version. Please read your warranty carefully, as this may vary between different vendors!

1.4 Trademarks

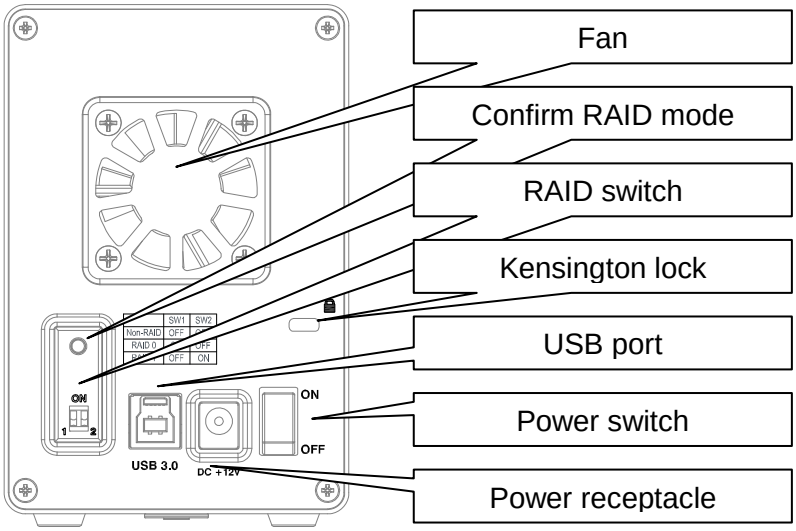
- MS-DOS, Microsoft, Windows Vista & 7 are trademarks of Microsoft Corporation.
- Apple Macintosh and Mac are trademarks of Apple Computer.
- All other third party brands and names are the property of their respective owners.

1.5 Detailed View

Front View



Rear View



1.5.1 LED indication

LED	Status
⏻	• Blue = Power on
HDD A & B	• Green = Status OK, USB connection to computer is established • OFF = Empty drive bay or USB connection is not yet established • Flashing Green = Data access (read/write) • Blinking slow (500ms on/off) = Drive failure (error) • Blinking fast (125ms on/off) = Rebuilding RAID 1 array

Note

In order to determine which type of blinking the LED indicates, stop transferring files to or from the hard drives. The slow blinking will be slower and the fast blinking will be faster than the usual flashing of the LED during data access.

1.5.2 RAID switch

DIP Switch	RAID Mode
	Non-RAID Switch position: 1 OFF, 2 OFF
	RAID 0 - Striping Switch position: 1 ON, 2 OFF
	RAID 1 - Mirroring Switch position: 1 OFF, 2 ON

Changing the RAID mode requires formatting the drives. Make sure to backup all existing data first!

Note

Except for the Non-RAID mode, two hard drives are required. After changing the RAID mode, press the button above the RAID switch to confirm the new setting.

1.6 RAID Modes

For RAID 0/1, hard drives of identical capacities are recommended. If the capacities are different, the total amount of the space that can be used will depend on the drive with the smallest capacity.

1.6.1 Non-RAID

The drives show up as independent volumes. Each drive can be formatted and accessed separately. If one drive fails, the other is not affected. This setting does not provide any performance or redundancy benefits.

1.6.2 RAID 0 - Disk Striping

The drives are shown as one large single volume but the total size will depend on the drive with the smallest capacity. This setting is used where speed is the primary objective but RAID Level 0 (also called striping) is not redundant. This form of array splits each piece of data across the drives in segments; since data is written without any form of parity data-checking, it allows for the fastest data transfer of all other modes. On the downside, if one drive becomes damaged, the whole array can become corrupted.

1.6.3 RAID 1 - Disk Mirroring

Two drives show up as one volume but only 50% of the total capacity, depending on the drive with the smallest capacity, can be used. RAID 1 creates an exact copy (or mirror) of a set of data on the second drive. This is useful when reliability and backup take precedence over storage capacity. Should one hard drive fail, it can be replaced and the data rebuilt automatically.

Note

In order for the computer to access volumes larger than 2TB, both the hardware and Operating System need to have the capacity to support large volumes (e.g. Windows Vista or Mac OS 10.4 and above).

1.6.4 Changing the RAID Mode

The RAID mode should be set after installing and before formatting the drives.

1. Install the hard drives.
2. Turn on the power.
3. Set the RAID switch and select your preferred RAID mode.
4. Press the button above the RAID switch to confirm the current setting.
5. Format the drives.
6. Done.

Note

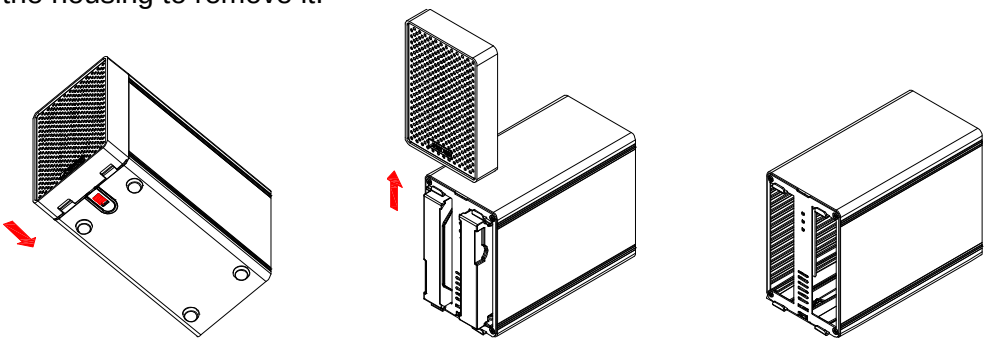
Changing the RAID mode requires formatting the drives. Make sure to backup all existing data first!

2 System Setup

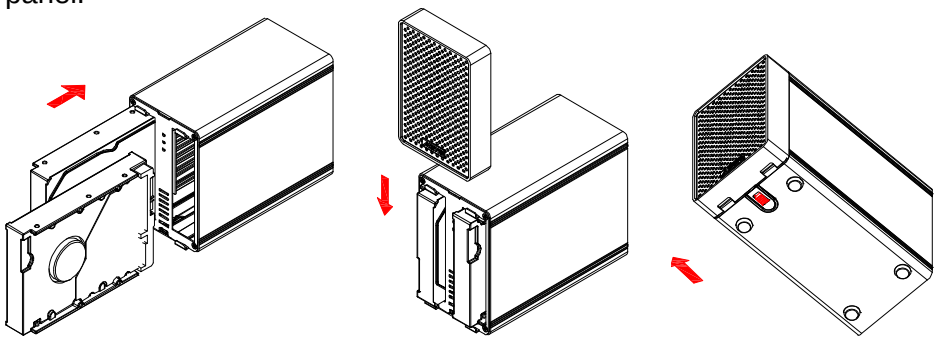
2.1 Hard Drive Assembly

The drives can be installed at any position, there is no specific order required.

1. Unlock the switch at the bottom of the case and lift the front panel upward and away from the housing to remove it.



2. Install the hard drives as illustrated below with the top of the drives, where the label is located, facing each other. Push the drives lightly into place and then replace the front panel.



3. Connect the device to your computer and turn on the power.
4. Set your preferred RAID mode and confirm it by pushing the button above the RAID switch.
5. For PC users, use the disk management tool or for Mac users, use the disk utility to create a new partition and format the drives.
6. Done! Your external drive is now ready to use.

Note

Be careful not to damage any components, and do not force the drives into place. If they not easily slide into place and fit, make sure the drives have been installed correctly. The top of the drives, where the label is located, should face each other.

2.1.1 Installing a HDD with existing data and setting up a RAID 1 array

1. Set the RAID mode to RAID 1.
2. Install the drive with the existing data into slot A and then turn on the power.
3. Press the “Confirm RAID mode” button and then make sure the computer has recognized your hard drive and you can access the data.
4. Install the second (blank) drive in slot B and let it rebuild the RAID 1 array. Make sure the capacity of the HDD in slot B is equal or larger than the capacity of the HDD in slot A!

2.2 Replacing Hard Drives

When a drive fails, the corresponding HDD LED (A or B) will be blinking slowly, unless the RAID mode is set to Non-RAID, in which case the HDD will simply not be accessible anymore.

If only one drive is defective and the RAID mode is set to RAID 1, the data can still be accessed but we strongly recommend replacing the faulty drive immediately to assure continued proper backup and data safety.

If more than one drive at the same time fails or if the RAID mode is set to RAID 0, the data will be lost and the system can not be accessed again until the drive(s) have been replaced.

2.2.1 Non-RAID

1. Check the HDD LED. The corresponding LED for the defective drive will be blinking slowly.
2. Turn off the power and replace the faulty drive(s).
3. Turn on the power. The corresponding LED will turn a steady green again.
4. Format the new drive(s).

2.2.2 RAID 0

1. Check the HDD LED. The corresponding LED for the defective drive will be blinking slowly.
2. Turn off the power and replace the faulty drive(s).
3. Turn on the power. The corresponding LED will turn a steady green again.
4. Push the button above the RAID switch to confirm the current RAID mode.
5. Format the drive.

2.2.3 RAID 1

1. Check the HDD LED. The corresponding LED for the defective drive will be blinking slowly.
2. Turn off the power and replace the faulty drive.
3. Make sure the USB cable is plugged in and connected to your computer.
4. Turn on the power and wait for about 30 seconds for the system to start up.
5. Install the new hard drive.
6. The LED of the source drive will start to blink rapidly and the LED of the destination drive will start to blink slowly. This indicates that it is now rebuilding the RAID array.
7. Rebuilding the RAID array will take several hours, depending on the drive capacity. When the data has been restored, the LEDs will turn a steady green.

Note

We recommend not turning off the power during the rebuild process but if the process is interrupted, it will continue rebuilding the data as soon as the power is turned back on.

2.3 Connection to Computer

A few precautions and notes when using your external storage drive:

- Do not expose the product to water or humid conditions.
- Do not cover the enclosure's ventilation holes.
- Before connecting the device, install the hard drives and set your preferred RAID mode.
- For the safe removal of your drive and to assure that no data is lost, always follow the correct unplug procedure for external hardware (e.g. Eject the drive before removal).
- In order for the computer to access volumes larger than 2TB, both the hardware and Operating System need to have the capacity to support large volumes (e.g.: Windows Vista, Windows 7 or Mac OS 10.4 and above).
- When the computer goes into stand-by mode, the hard drives in the external enclosure will spin down as well.

2.4 Precautions

2.4.1 Power on/off precautions

It is highly recommended to switch the unit off when not in use. When re-locating the device or when not in use for an extended period of time, we strongly recommend unplugging the unit.

2.4.2 Location and placing precautions

Avoid positioning your device in the following places:

- Locations with direct sunlight, next to radiators, other sources of heat.
- Locations with very high temperatures (more than 38° C) or humidity (more than 90%).
- Very dusty or sandy locations.
- Locations subject to vibration, shock, or with a sloping base.

2.4.3 Electricity and power plug

Careful attention must be paid to the following points in order to prevent damage, fire, and/or injury:

- When removing the power cable from the socket, pull on the plug fixture and never on the cord.
- Do not connect and remove the power cable with wet hands.
- Keep the power cable away from heaters.
- Never try to repair the power cable yourself or to modify it in any way.
- If the unit is dropped or becomes damaged in any other way, unplug the power cable.

2.4.4 Cables

Use only the cables supplied or recommended by your vendor in order to avoid the risk of malfunction, electric shock, and/or possible interference to the device.

2.5 About Data Backup

To protect your files and help prevent the loss of your data, we strongly recommend that you keep two copies of your data, one copy on your MT2U3-MP and a second copy either on your internal drive or another storage media such as CD, DVD, Tape or an additional external drive.

Any loss or corruption of data while using the MT2U3-MP is the sole responsibility of the user, and under no circumstances will the manufacturer be held liable for compensation or the recovery of this data.

3 Appendix

3.1 Specifications

Application	• 3.5” SATA-I or SATA-II hard drives • 1.5Gb/s or 3.0Gb/s • 20GB - 2TB
Interface/Ports	• USB 3.0 SuperSpeed
Data Transfer	• USB 3.0 up to 5Gbps (625MB/s) • USB 2.0 up to 480Mbps (60MB/s)
System Requirements	• PC: Windows Vista or Windows 7 • Mac: Mac OS 10.4 or above • Your hardware device must have the correct corresponding port (e.g. USB 3.0, USB 2.0 or PCI card)
Operating Environment	• Temperature: 5°C ~ 40°C • Humidity: 20%RH ~ 80%RH
Storage Environment	• Temperature: -20°C ~ 70°C • Humidity: 10%RH ~ 90%RH
Power Supply	• Input: AC 100-240V • Output: DC +12V/3A
Product Size	• 17.7cm x 12.3cm x 8.1cm • 7in x 4.8in x 3.2

3.2 FAQ

Q: Can I connect this device to a USB 2.0 host?
A: Yes, this device is backwards compatible with USB 2.0.

Q: What file system should I choose to format my drive?
A: This will depend on how you want to use the drive but in general, we recommend:
- Windows Vista/7 → NTFS
- Mac OS X → HFS+ (Mac OS Extended)
- To use it on both PC and Mac → FAT32 (single file size is limited to 4GB)

Q: How many drives can fail before I lose my data?
A: For RAID 0, any drive failure will result in the data being lost. For RAID 1, more than one drive failure at the same time will mean the data can not be recovered anymore. For Non-RAID, only the data on the defective drive will be lost.

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